INVENTORY COST AND CONTROL

SMACNA
Sheet Metal and Air Conditioning Contractors' National Association

Inventory Cost and Control

Prepared under the supervision of the SMACNA Business Management Education Committee

With the assistance of

David Norris, *Chairman*
Dean E. Norris, Inc.
P.O. Box 47719
624 East Douglas
Wichita, KS 67202

Richard Cramer, II
Dee Cramer, Inc.
1819 South Dort Highway
Flint, MI 48503

Mark Watson
Climate Engineers, Inc.
883 Shave Road, N.E.
Cedar Rapds, IA 50265

Calvin Askeland
Johnson Contracting Co., Inc.
2750 Morton Drive
East Moline, IL 61244

Richard Dupre
New England Ventilation, Inc.
514 Main Street
Tewksbury, MA 01876

P. Michael Tolson
Delta Temp Corporation
5450 Rock Hampton Court
Indianapolis, IN 46268

Kenneth P. Johnson
Albers Sheetmetal & Ventilating, Inc
200 W. Plato Blvd.
St. Paul, MN 55107

Robert Fella
Leo J. Roth Corporation
214 Clifford Avenue
Rochester, NY 14621

Terence J. Rainey, *Staff*

SMACNA and its authors and editors have applied diligence and judgment in locating and using reliable sources for the information published herein. However, no guarantee or warranty can be given, and all responsibility and liability for loss or damage are hereby disclaimed by the association, authors, and editors with respect to the accuracy and correctness of the information contained herein.

SMACNA
© Copyright 1990

Printed in the United States of America

Reprinted 1997

Contents

Inventory Cost and Control 1

Overview 1

The "Real Cost" Of Inventory 2

Analysis Of Current Inventory 4
- Two Methods of Inventory Analysis 4

Order Rules 7
- Steps in Developing Order Rules 7
- Forecasting 8
- Replenishment Time 9
- How Much to Order 9
- When to Order 13
- Order Rule Forms 14

Physical Versus Paper Inventories 18

Comments And Suggestions On Inventory Cost And Control 19

INVENTORY COST AND CONTROL

OVERVIEW

An inventory cost control system may be very simple or it can be quite elaborate. Any system, however, can be thought of as essentially an integrated system of rules for deciding when and how much to order. The decision of when to order may be based on either a constant review time or a constant reorder time, the latter being favored by most companies. The order quantity decision is a problem of minimizing both the total cost of maintaining an inventory and the cost of placing an order. Generally management must establish operating objectives which can be translated into inventory objectives. The task of inventory management is one of controlling inventory through the selection of the time to order and the quantity to be ordered. Inventory management takes into full account the future requirements, as well as the uncertainties, of estimates, inventories and the ordering or setup costs of new items.

The total inventory serves the function of making a company's internal operation relatively stable, while providing necessary service to customers. It is possible to reduce inventory by purchasing more frequently, in smaller lots. However, the processing of many small orders and the increased receiving load could quite possibly result in a serious disruption of internal operations. Further, a substantially smaller inventory might incur risks of unacceptable delays in meeting the customers' needs or installation schedules.

On the other hand, if inventory were substantially larger, the internal operation would be much smoother but the capital investment might be intolerable. Management therefore attempts to strike some middle ground where an acceptable investment buys an acceptable degree of smoothness in internal operations while still meeting the customers needs.

Inventory management is a critical function. It can either increase or decrease cash flow, can improve or destroy customer service and can make or break company profits.

THE "REAL COST" OF INVENTORY

Inventory costs, although not always easily seen, are significant. Typically the cost of inventory is about 25% of its shelf value per year. The cost of inventory involves four major areas.

1. Obsolescence — Obsolescence normally accounts for between 2% and 10% of the total value of the inventory per year. A general rule of thumb is to never hold inventories for which there is no immediate need. Speciality items or those of infrequent use should not be stocked. Items should not be stocked unless they are used at least once a week or cannot be readily picked up through a local wholesaler or manufacturer. If the company does not stock the item it cannot become obsolete.

2. Interest — Inventory costs money and therefore must be funded in some way. The cost is easily seen when the dollars are borrowed from a bank since the interest is normally paid monthly, quarterly, semi-annually or annually. The cost is not so easily seen when inventory is funded through company profits. Using company profits to fund inventory is not only expensive but it ties up the company's most valuable asset — Working Capital. The cost is easily calculated by simply asking what interest rate could be earned if those same funds were invested in some other way. A simple certificate of deposit can earn 8% and with wise investment those funds could quite possibly earn 10% to 12%.

3. Depreciation — Depreciation is normally considered as a reduction in the value of an asset. In the case of inventories the reduction in value comes in the form of damage, deterioration due to storage or handling, age or weather. Normal loss usually runs about 5% per year.

4. Storage — This is perhaps the most obvious cost of inventory. This cost includes such items as warehouse space, insurance, taxes, salaries of personnel and storage expenses in the form of supplies or equipment to maintain the items. A normal cost of storage for an inventory is about 4% of the value per year.

The costs of maintaining an inventory of any significant size are very high and need to be seriously considered prior to either creating or making significant increases in the size of a company's inventory.

Estimated Cost of Inventory Per Year

Area	Percent of Value of Inventory per year
Obsolescence	2 % - 10%
Interest	8% - 10%
Depreciation	4% - 6%
Storage	3% - 5%
Inventory Maintenance	17% - 31%

Example:
Lets assume the company maintains roughly $125,000 in inventory throughout the year. The cost of that inventory is as follows:

Obsolescence	$125,000 X 10%	$ 12,500
Interest	125,000 X 10%	12,500
Deprecation	125,000 X 6%	7,500
Storage	125,000 X 5%	6,250
		$ 38,750

REMEMBER
The $38,750 is a very real cost of doing business and must be considered in the pricing of the product or service offered.

ANALYSIS OF CURRENT INVENTORY

Inventories can serve a number of useful purposes. They can be utilized to generate better purchase prices (buying in volume), reduce costs (less travel time to and from the job), place your company in a better position to serve the customer (parts and or materials readily available) and to cover uncertainty (knowing parts and materials will be available when needed at a known price). A method of analyzing the inventory is needed because there are advantages and disadvantages to having too much or not enough inventory. The most common method of getting an overall idea of how the inventory is being utilized is in what is known as "turns" per year. "Turns" refers to the number of times the dollar value of the inventory is used each year, not necessarily how many times a specific item is used during the year. An example will help to illustrate the point.

Dollar value of inventory removed during the year

"Turns"	= Value of Inventory
Value of inventory	= $ 125,000
Dollar value of items removed from inventory during the year	= $ 437,849

$ 437,849 "Turns" = $ 125,000 = 3.5 turns per year

A rule of thumb for the sheet metal industry is to have three (3) to four (4) turns per year.

Two Methods of Inventory Analysis

1. Distribution by Value
2. ABC Method

Inventory Analysis — Distribution by Value
This is a rather simple method of determining which items have the most activity during a year. Once these items are identified the company can then devote its resources more fully to the areas of greatest activity thus reducing overall costs while gaining better control. The method of evaluation by Distribution of Value is as follows:

1. Calculate the annual dollar sales for each item in inventory by multiplying the unit cost by the number of units used during the year.
2. Sort all items by annual dollar sales in descending sequence.
3. Starting at the top of the list, compute a running total, item by item, of the item count, the dollar sales and the inventory value.
4. Compute and print for each item the cumulative percentages for the item count and cumulative dollar value.

Typically a small number of items account for a large portion of the dollars taken as income (dollars used from inventory). The top 1% of items might account for 15% of the dollar volume; the upper 5% might account for 40% of the dollar volume; the upper 20% of the items might account for 70% of sales. The upper 60% of the items might account for 95% of the sales or conversely the lower 40% of the items of only 5% of the sales. The objective is to determine, and then closely watch, inventory items which tie up the company's resources both in terms of capital dollars and personnel.

Inventory Analysis — ABC Method

The ABC method of inventory control is used to keep the amount of attention given an item somewhat in proportion to its importance. The importance of an item is determined by:

1. The value or need for the item over a period of time.
2. The amount of lead time required to reorder the item and have it back on the shelf.
3. The costs of being out of the item in terms of delays or lost business.

Generally a small percentage of the items in an inventory make up a large portion of the investment in inventory. These items are considered to be CLASS A items. *Special care needs to be taken to maintain this class as it has significant effects on the business.*

The CLASS B is a kind of "normal" care area. These parts or supplies would be handled on a routine basis since they are important but not critical to the business in terms of value or immediate need.

The CLASS C items are relatively unimportant in terms of the overall inventory and this class normally makes up well over half of the total items. Handling these items should be simple and as inexpensive as possible, usually a simple tag or two bin system works well.

Order Rules

Order rules are simply a statement of when to replenish inventories, how many to purchase and how often to look at the inventory item to determine if reorder is necessary. An order rule might read like this:

ORDER RULE

For 24 gauge sheets order 100 sheets at a time whenever the quantity on hand plus the quantity on order falls below 150. Review this item every Friday.

Order rules need to be fit to the type of inventory being handled. In the case of CLASS A items the rules may need to be very detailed with much time spent on the proper amount to keep in inventory. Large dollars are involved; being out of an item could cause serious problems in terms of providing the customer with the service needed and expected. Other items, such as sheet metal screws, can have very simple order rules. One fifty pound box sitting around will not tie up a lot of funds. The screws are used daily so everyone is aware of the quantity on hand. The worst situation would be to run out of the screws. An employee might easily go to the local supplier.

The objective in applying order rules is to secure the best balance between:

1. The cost of replenishing inventory.
2. Costs of carrying the inventory.
3. Costs of ordering and controlling inventory.

Steps in Developing Order Rules

There are several steps involved in developing and applying order rules:

1. Determine a suitable method for forecasting future usage.

2. Determine the amount of time required to replenish each item.
3. Determine the basis for deciding how much to order by analyzing cost factors for each type of inventory.
4. Establish the basis for deciding when to order by determining the appropriate level of protection against running out of stock.
5. Determine the appropriate form of order rule to apply by analyzing the characteristics of each class of inventory.

Each of the above items can be handled without a great deal of difficulty using:

A) Our knowledge of the item.

B) Its importance to the company and our customer.

C) A healthy dose of common sense.

Forecasting

Reaching a sound decision on how much and when to order requires that some sort of assumptions be made concerning future usage. This can be a very difficult thing to do in an industry that is seasonal by its very nature. Because of the seasonability of the sheet metal industry forecasts may often need to be changed or revised. Often large jobs will significantly affect forecasts, therefore, these jobs must be considered when forecasting future needs. We must always remember where the funds normally come from in order to purchase inventory — company profits. Also, increased inventory will affect the cash flow status of the business.

It would be silly to spend a lot of time and money developing a detailed forecast of how many sheet metal screws have been used, and therefore will be used in the future, especially since we can go around the corner and get all we need in a relatively short period of time. On the other hand if we are stocking a very expensive item that is not used on a regular basis, significant time would be justified in determining how many to buy and what our projected usage might be.

Replenishment Time

Once we have forecasted the future usage, based on history, value, current market conditions and inventory of work, the next step is to determine the time it will take to replenish the item. Replenishment time is defined as the total interval between finding an item needs to be ordered and having it in the shop. Replenishment time should therefore include all these elements:

1. Interval between the time stock is physically moved out of inventory and the time the transaction is entered into the inventory record. This time period can be as short as a few minutes for a large highly sophisticated company with a full time inventory clerk and an on-line computer to a couple of weeks in a small shop when inventory is checked periodically.
2. Interval between entry on records and review for reordering. In some cases this is a short period of time when the person who keeps inventory records also orders the replacement materials. In cases where keeping inventory records and ordering are done by different people, the interval between record entry and reordering is lengthened.
3. Time required for processing and placing the order. This time can vary widely - mostly due to the material itself. Processing and ordering time for simple low value items are very short. But for significant amounts of sheet metal or other expensive items, multiple requests for quotes may be sent out, or at least multiple suppliers checked with, to obtain the best possible price.
4. Time between ordering and new stock being available for use. This again will depend on the item and its origin. Large volume purchases may take several weeks for delivery while others may be delivered the same day.

How Much to Order

The objective in deciding how much to order is to achieve the lowest overall cost — not merely the lowest cost of carrying inventory. This requires establishing the most economical balance among the following conflicting factors.

1. The cost of carrying inventory.
2. The overhead costs of ordering an item.
3. The costs of buying in smaller quantities versus larger bulk orders with lower unit prices.
4. Risks of loss through obsolescence, deterioration or price decline.
5. Cost of additional storage space if present warehouse capacity is exceeded.

The problem of balance must be carefully considered. If smaller quantities are ordered, the average inventory level is lower and the carrying, space and obsolescence costs decrease; yet smaller quantities result in more frequent ordering, and the costs of the other factors increase. For items with highly erratic usage, the most economical balance will usually be achieved by ordering the quantity expected to be required in the near future. For items having sustained and regular usage, however, the most economical balance can usually be obtained by calculating the economic order quantity (EOQ) for the item. Many useful formulas have been developed for calculating EOQs. A number of techniques are available to simplify the actual computations. These include hand calculations, EOQ slide rules, charts and tables. The simplest and most widely used method is to determine the total MINIMUM cost between ordering costs and inventory costs for the year. The formula is as follows:

Total Annual Cost	=	Ordering and Set Up Costs	+	Inventory Carrying Costs

$$T = \frac{S \times A}{Q} + \frac{Q \times C \times I}{2}$$

Where:
T = Total annual costs, dollars
Q = Order quantity, units
I = Inventory carrying cost as a decimal fraction
C = Unit cost of the item, dollars
S = Expected annual usage, units
A = Out-of-pocket setup and ordering cost, in dollars, for each order placed.

The inventory carrying cost, I, includes only variable cost as a fraction of the inventory investment. These variable costs may include the cost of capital invested in the item, insurance, inventory taxes and obsolescence or spoilage. Costs for space are not included because they do not normally vary short term with changes in the level of inventories. If warehouse space is rented on a short-term basis and is variable, the factor for the cost of space should be added to the formula. The economic order quantity is determined by trying different values of order quantity, Q, in the formula until the lowest total cost, T, is obtained. The order quantity corresponding to the lowest total cost is the economic order quantity.

Example:
26 gauge sheet metal will be used as our example. The Order Quantity (Q) will be varied to come up with the most economic quantity to order.

Q — Order quantity, initially 30 sheets
I — Inventory carrying costs as a decimal fraction.

Obsolescence	2%
Interest	8
Depreciation	4
Storage	3
	17% = .17

C — Cost per unit or sheet (in this case it is $ 9.88/sheet)
S — Expected annual usage is approximately 1000 sheets
A — Out-of-pocket set up and ordering costs.

It takes an office person, at $5.50 per hour, about two hours to contact the vendors for pricing, write up the order and do the normal paperwork. Cost of supplies — paper, forms, etc. is $.45 per order.

The total out of pocket costs per order are:

= ($5.50 x 2 hr.) + $.45)
= $ 11.45

$$T = \frac{S \times A}{Q} + \frac{Q \times C \times I}{2}$$

Order Quantity of 30

$$T = \frac{1000 \times \$\,11.45}{30} + \frac{30 \times \$\,9.88 \times .17}{2}$$

= $ 381.66 + $ 25.19
= $ 406.85 (when ordering in units of 30)

Order Quantity of 50
The cost for ordering in units of 50.

$$T = \frac{1000 \times \$\,11.45}{50} + \frac{50 \times \$\,9.88 \times .17}{2}$$

= $ 229.00 + $ 41.99

= $ 270.99 (when ordering in units of 50)

Order Quantity of 100
The cost for ordering in units of 100.

$$T = \frac{1000 \times \$\,11.45}{100} + \frac{100 \times \$\,9.88 \times .17}{2}$$

= $ 114.50 + $ 83.98
= $ 198.48 (when ordering in units of 100)

Order Quantity of 200
One more example — ordering in units of 200.

$$T = \frac{1000 \times \$\,11.45}{200} + \frac{200 \times \$\,9.88 \times .17}{2}$$

= $ 57.25 + $ 167.96

= $ 225.21

Summarizing the four (4) examples we have just run will let us see certain trends.

	Order Quantity Costs	Ordering Inventory Carrying Costs	Total Cost
30	$ 381.66	$ 25.19	$ 406.85
50	229.00	41.99	270.99
100	114.50	83.98	198.48
200	57.25	167.96	225.21

As the order quantity increases the cost of ordering naturally decreases since the company needs to order less frequently. The opposite is true of inventory carrying costs, these costs increase as the quantity ordered increases, as you would expect, since this means larger quantities of inventory are kept on hand. There is a desirable balance between the two costs. Based on our example, the orders should be between 100 and 200 at a time. If we continued to develop costs between the 100 and 200 lot size we would find the "least cost" economic order size.

When to Order

An order rule contains a signal or indicator of when to order, based on the replenishment time for the item. The indicator may be expressed in time - "Order five weeks before an item is needed in stock" or in units of inventory "Order when stock on hand and already on order drops to 75 units." When the signal is in units of inventory, it is called an order point.

To assure that the item will be available when needed, the time must be the maximum probable replenishment time for the item, or the units must be the maximum probable number of units of usage during the maximum likely replenishment time. This number of units can be thought of as having two parts, the average or expected number of units used during the average expected replenishment time, and a safety stock to cover unexpected increases in usage or in replenishment time.

Typically, usage during replenishment time is variable and cannot be predicted exactly. Therefore, providing complete and total protection against running out of stock under all possible circumstances is not feasible. In general, as the level of protection is increased, the additional inventory required to provide still more protection increases disproportionately, and at some point becomes uneconomical. It is necessary, therefore , to choose a reasonable level of protection. Thus maximum probable usage during replenishment time becomes the value that will provide the appropriate level of protection required.

Order points can be established by a number of different methods ranging from rules of thumb to fairly complex statistical analyses. The simplest, and most used method, when using a reorder point quantity as the key is:

Reorder Point Quantity	=	Quantity used during replenishment time	+	Quantity needed as safety Stock during replenishment

Quantity used during replenishment time is:

= number of days it normally takes to receive the order once placed	X	(Normal usage/day)
= (8 days to receive order)	X	(5 sheets/day)
= 40 sheets		

and

Quantity needed as safety stock during replenishment period (time from when the item is placed on order until it is received)

Based on past history the delivery varies plus or minus two days from the normal 8 day delivery, therefore the safety stock is:

= (2 days)	X	(5 sheets/day)
= 10 sheets		

Reorder Point Quantity	=	40 sheets	+	10 sheets
	=	50 sheets.		

Thus, when our current inventory drops to approximately 50 sheets of material it is time to reorder. This assumes that the inventory is checked daily. If inventory is only reviewed weekly, or some longer period of time, the safely stock will need to be increased.

Order Rule Forms

There are six (6) basic types of reorder rules.

1) Fixed reorder point
2) Net requirements
3) Reservation
4) Fixed review time
5) Group ordering
6) Two-bin order control

None of these will work 100% for a company's inventory. It is quite normal to used different types of rules depending on which items you are working with. The Class A items will need more attention than Class C items.

1. Fixed Reorder Point

Under the fixed reorder point rule the reorder point is established as an inventory level as large as the reasonable maximum usage of the item during the lead time required to replenish stock. When the stock on hand plus stock already on order falls to the reorder point, the inventory planner places an order. How much to order is prescribed by a predetermined economic order quantity. The economic order quantity is calculated as the quantity that will result in the lowest total costs of ordering. Thus the order is fixed and the time interval between orders varies, depending on the rate of usage. In the fixed reorder rule, the quantity on hand is checked every time material is removed from the inventory. When it reaches a fixed reorder point, a quantity of a fixed size is ordered. This type of order rule can be widely used. It is relatively simple to operate and to maintain, because order points and quantities for many items need be revised only infrequently. It is also flexible, because it automatically adjusts to changes in usage through more or less frequent ordering. Within the normal ranges of inventory carrying, ordering, and setup costs, the system provides economical ordering even when changes in usage are fairly significant. For severe changes in usage, the system can be modified. One method is to develop separate order points and order quantities for each season of the year.

2. **Net Requirements**

Under the net requirements rule, gross requirements in units are determined for each individual item, either from a forecast or from current needs, for each period (such as each month) in the future; the gross requirements are then converted to net requirements by subtracting the number of unallocated units on hand and on order. The inventory planner orders the net requirements, thereby adjusting for any errors in the forecast for the previous period. Inventory is ordered every time requirements are developed, usually at fixed intervals such as weekly or monthly. The order quantity varies, depending on the net requirements.

3. **Reservations**

Under this rule order size is determined by the economic order quantity for each item. When to order is established by the requirements for the item. The gross requirement quantity for each item is reserved on the inventory record to indicate that portion of the inventory is not available for other uses. When all the inventory quantity on hand plus that already on order has been reserved, it is time to reorder the item. A reservation type of order rule is most useful when potential savings from quantity purchases are significant and when the possible reductions in inventory levels for safety stocks are large in relation to the extra clerical effort. Thus it is most usually applied for high-cost items, items with moderate to high annual usage value, and items with variable but sustained usage.

4. **Fixed Review Time**

When the fixed review time rule is used, items are ordered at fixed, regular intervals, such as every week. The specified interval indicates when to order. How much to order is determined by subtracting the stock on hand, plus that already on order, from a predetermined level. Thus the order quantity varies, but the interval between orders is fixed.

5. **Group Ordering**

Group ordering order rules are used for ordering groups of items at the same time. Group ordering often, but not always, uses a variable interval between orders, a fixed total order quantity, and fixed order quantities for individual items.

6. **Two-bin Order Control**

The two-bin order control rule is designed to provide control at a minimum cost. It relies on physical and visual control of inventory rather than on formal inventory records. The order principles are similar to those used in fixed reorder point ordering. The normal procedure is as follows. The clerk maintains two adjacent bin locations for each item. One bin contains a quantity equal to the reorder point quantity, and this bin is sealed or taped shut so that all withdrawals of stock are made from the second bin. The signal to reorder comes when the second bin is emptied and the seal on the first bin is broken to continue further withdrawals. At that time, the clerk notes the order quantity (normally posted on the bin) and reorders. When the new order arrives in stock, he places it in the second bin and seals it, while continuing to make withdrawals from the first bin. When the first bin is emptied, it is again time to order more stock.

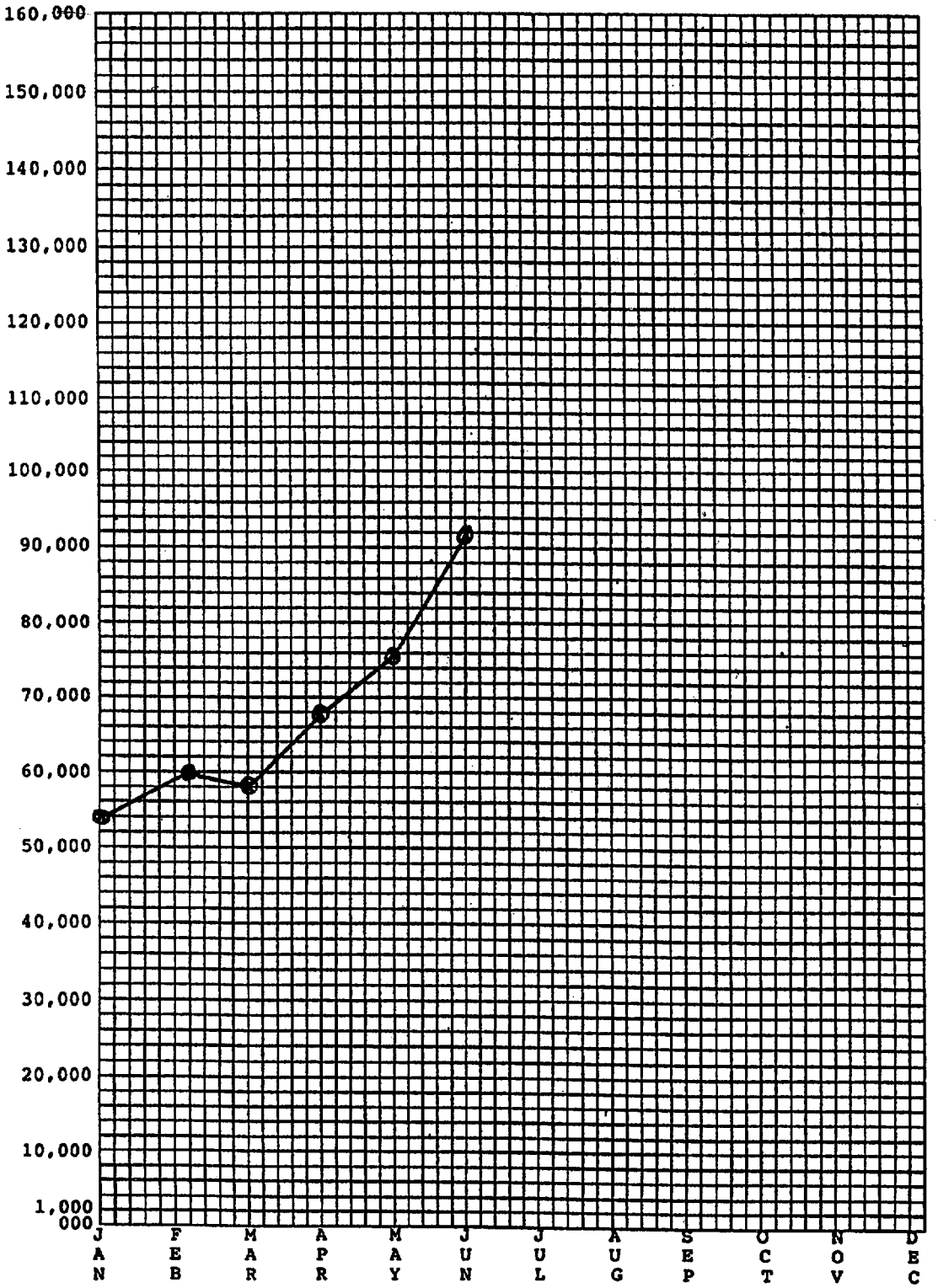
Physical Versus Paper Inventories

Cash flow is a critical issue to any company in today's marketplace. As a company continues to grow, it is natural for inventories to increase. Because inventories must be funded from something, past or current profits, line of credit at the bank, outright loan, or from the owners assets, they often can seriously affect cash flow. While it is neither practical nor necessary to take a physical inventory more than once or twice a year, getting a "rough idea" of where a company stands is very important. Therefore, it is good idea to maintain a paper inventory on a regular basis. A paper inventory in essence starts with the physical inventory and then each time materials are purchased for inventory they are added to the total and each time items are removed from inventory for a job the dollar amount is subtracted from the inventory.

Current Inventory	=	Beginning Physical Inventory	+	(Purchases)	–	Cost of materials removed from inventory

What the company is looking for here is a trend. Therefore it is necessary to determine the "paper inventory" each month and then to graph it on a graph similar to the one on the next sheet. An upward trend on the graph will be a "Red Flag" to the company that a cash crunch may be on the way. It is important not to react to quickly to a sudden increase or decrease in inventory dollars as inventories can vary widely when significant jobs are in process. Use of a graph will let the company recognize trends that may not be noticed otherwise. Graphing over a period of years will begin to show seasonal trends, therefore allowing the company to make provision for cash flow dollars prior to the time they are needed. Whenever a physical inventory is taken the graph should be updated.

Total Dollar Value of Inventory



Comments And Suggestions On Inventory Cost And Control

1. Location of inventory within the facility is very important. Consider drawing a frequency diagram. Simply make a "rough" layout of the physical floor plan and then observe for a few days where people come from to get inventory items and where they take these items. Draw a line on the layout showing their path. Over a period of time the layout will clearly show traffic patterns. These patterns will tell you if it is necessary to relocate the stockroom.

   Note: Put small expensive items under lock and key. Don't tempt people when it is not necessary.

2. If you are a large company set up a "Tool Room" and man it with a full time person. Keep track of tools and make people accountable which will:

   a) Reduce theft

   b) Allow more efficient scheduling by having tools available when needed.

   c) Reduce tool replacement costs.

3. Be sure you have the proper equipment to handle large inventory items. If you move a lot of large heavy stock a walking or mobile forklift truck may save time, money and reduce injuries.

4. Keep a "neat, well organized" inventory. Quality of organization is normally a direct reflection of how the company operates. Employees DO pick up on this type of thing and tend to become what is expected of them.

5. Never add an item to inventory unless it is cost effective. This means putting an item in inventory, with all its costs (17% - 31%), must be less costly than the lost time and expense involved in getting the part.

MATERIAL CHARGE SHEET

JOB NAME: ______________________

JOB/WORK ORDER/CHANGE ORDER NUMBER: ________

DATE: ___/___/___

GALVANIZED IRON SHEETS	SHEETS	SQ.FT.	LBS.	COST
26 GA. 48 x 120				
24 GA. 48 x 120				
22 GA. 48 x 120				
20 GA. 48 x 120				
18 GA. 48 x 120				
16 GA. 48 x 120				
GA. Paintlock 48 x 120				
GA. Black Iron 48 x 120				
Aluminum				
Copper				
Stainless				

TOTAL: Cost Code 600 ______

DUCTBOARD	SQ.FT.	COST

TOTAL: Cost Code 600A ______

MISC. MATERIAL	SIZE	QTY.	CODE	COST
Pop Rivits				
S.M. Screws				
Duct Tape				
Hail Screen				
Caulking				
Vane Rail				
Canvas				
Drill Bits				
Rod				
Bolts				
Bolts				
Bolts				

DUCT LINER	SQ.FT.	COST
1/2" x ___ lb.		
1" x ___ lb.		

TOTAL: Cost Code 602 ______

DUCTMATE	QTY.	CODE	COST
Angle			
Corners			
Gasket			
Snap/Drive Clts			

TOTAL: ______

MISC. METAL	QTY.	CODE	COST
Angle			
___x___x___			
___x___x___			
___x___x___			
Other			

TOTAL ______

6. To get a rough idea of how much inventory is in stock, consider using a ruler and measuring the height of items like sheet stock (knowing how many sheets equal an inch). Also a scale is very handy when counting many small items. Weigh one item for a unit weight and then weigh them all and divide the total weight by the unit weight to get a count.

7. Make employees accountable for inventory even if you cannot justify a full time employee in this area. Have all items removed from inventory recorded on paper so usage can be traced. A sample "Material Charge Sheet" is shown on the next page.

8. Only put your inventory on a computer if you are willing to invest in full time personnel to manage the inventory. The old saying "garbage in - garbage out" is true. The system will only be as good as the information put in and as accurate as it is timely. It will be of little value to have a beautiful system that you only update on a weekly basis. A good rule of thumb: Never put **ANYTHING** on a computer unless the company first has a good grasp of the system manually.

AGAIN IF PUTTING AN ITEM IN INVENTORY DOES NOT SAVE THE COMPANY MONEY DO NOT PUT IT IN INVENTORY !!!!!!!